EXHIBIT 6

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1   UNITED STATES DISTRICT COURT

2   NORTHERN DISTRICT OF CALIFORNIA

3   SAN JOSE DIVISION

4

5   CISCO SYSTEMS, INC.,   )
)
6   Plaintiff,   )
) Case No.
7   vs.   ) 5:14-cv-05344-BLF (PSG)
)
8   ARISTA NETWORKS, INC.,   )
)
9   Defendant.   )
     _____)

10

11

12   HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

13

14

15   VIDEOTAPED DEPOSITION OF KIRK LOUGHEED

16   Palo Alto, California

17   Friday, November 20, 2015

18   Volume I

19

20

21

22   Reported by:

     CARLA SOARES

23   CSR No. 5908

24   Job No. 2187110

25   Pages 1 - 189

                                              Page 1

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1   MR. NEUKOM: Objection. Compound, vague.   15:37:00

2   THE WITNESS: -- we did not make any such

3   assertions.

4   MR. NEUKOM: And foundation.

5   BY MR. FERRALL: 15:37:08

6   Q   Did you ever have an agreement with

7   Mr. Rekhter about the right to use any of his

8   contributions to the BGP work that you guys did?

9   MR. NEUKOM: Vague, compound, calls for a

10   legal conclusion --   15:37:44

11   THE WITNESS: Could you --

12   MR. NEUKOM: -- and mischaracterizes prior

13   testimony.

14   THE WITNESS: Could you repeat the

15   question, please?   15:37:59

16   BY MR. FERRALL:

17   Q   Sure. I'll ask a slightly different

18   question.

19   Did you ever ask permission from

20   Mr. Rekhter to use any of his contributions to the   15:38:09

21   BGP project?

22   MR. NEUKOM: Objection. Vague, compound,

23   calls for a legal conclusion.

24   THE WITNESS: We did not seek permission

25   from one another for our individual contributions.   15:38:26

Page 128

1   BY MR. FERRALL: 15:38:30

2   Q   Okay. IBM didn't ask you for permission,

3   either, correct?

4   A   No.

5   Q   One of the CLI terms in this case is the   15:39:20

6   term "IP address."

7   Are you familiar with that?

8   A   I'm familiar with the command expression

9   "IP address."

10   Q   Did you come up with the phrase "IP   15:39:33

11   address"?

12   A   When Cisco came out of Stanford, we were

13   shipping an IP -- an Internet protocol only router.

14   And there was a command "address" that took some

15   arguments.   15:40:12

16   And after -- after a while, we started

17   adding other protocols to the software. The first

18   one was "DECnet." And since "address" was already

19   taken to refer to IP functionality, Internet

20   protocol functionality, we came up with "DECnet   15:40:44

21   address," and then had a DECnet address after it.

22   That "DECnet address" command could have

23   very well have said "address," and then DECnet

24   addresses look different than IP addresses, and we

25   could have had the software figure out which type of   15:41:11

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1   address we were referring to. But we chose "DECnet   15:41:13

2   address."

3   It became clear that much more -- that we

4   were becoming a multi-protocol router. We were

5   adding other protocols into the box, into the   15:41:27

6   software.

7   And I had -- I value -- I value the

8   aesthetic of having a symmetric-looking command line

9   expression, symmetric hierarchy. It was clear we

10   were heading towards a hierarchy.   15:41:52

11   So at some point after DECnet and perhaps

12   a few other protocols to make things look very

13   similar, we started prefacing our IP-only commands

14   with "IP." And that gave a very -- what I thought

15   was a very elegant, symmetric, elegant way of   15:42:16

16   referring to different protocols within a

17   multi-protocol router.

18   So that is the history of the "IP address"

19   command.

20   Q   Okay. My question was simpler. I   15:42:36

21   appreciate that answer. But my question was a

22   little simpler than that, but let me ask it a

23   different way.

24   You had heard of the term "IP address"

25   before you joined Cisco, hadn't you?   15:42:51

Page 130

1   MR. NEUKOM: Objection. Vague and asked   15:42:59

2   and answered.

3   THE WITNESS: I suppose I had. When one

4   is talking about different networking protocols, one

5   needs to clarify which networking protocol one is   15:43:10

6   talking about. So it was probably terminology that

7   was in the air.

8   BY MR. FERRALL:

9   Q   Does the same go for "IP host," also? You

10   had heard that before you joined Cisco?   15:43:29

11   MR. NEUKOM: Objection. Misstates prior

12   testimony.

13   THE WITNESS: The original form of the

14   "host" command was just "host command." It was

15   another one that had to distinguish, in a   15:43:41

16   multi-protocol world, in a multi-protocol piece of

17   software, what you were talking about.

18   It would have looked very odd in a

19   multi-protocol router that there was one protocol

20   that wasn't prefaced by a -- some descriptive   15:44:03

21   keyword.

22   BY MR. FERRALL:

23   Q   Following up on that, the purpose of your

24   use of "IP" as the first keyword in that command "IP

25   host" was to distinguish the protocol that it's   15:44:33

Page 131

1   the like, or "database lookup" or...   16:16:59

2   BY MR. FERRALL:

3   Q   Did you coin the term "domain lookup"?

4   A   I decided to use that as a command

5   expression within the software, yes.   16:17:21

6   Q   I'll ask the question one more time. I'm

7   asking you if you coined the term "domain lookup."

8   MR. NEUKOM: Objection. Asked and

9   answered and vague.

10   THE WITNESS: I did not.   16:17:43

11   BY MR. FERRALL:

12   Q   Do you know who did?

13   A   No idea.

14   Q   When was -- to your knowledge, when was

15   the term "routing" ever used in conjunction with the   16:18:41

16   Internet protocol?

17   MR. NEUKOM: Objection. Vague and

18   foundation.

19   THE WITNESS: I don't know when the term

20   "routing" was used.   16:19:05

21   BY MR. FERRALL:

22   Q   Were people in the field talking about

23   routing in connection with IP before you joined

24   Cisco?

25   MR. NEUKOM: Objection. Vague, compound.   16:19:24

                                                    Page 144

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

```
 1          THE WITNESS:  Yes.                        16:19:27

 2    BY MR. FERRALL:

 3       Q   Tell me what, if anything, was creative

 4    about your decision to use the term "IP routing" as

 5    a CLI command.                                  16:19:51

 6            MR. NEUKOM:  Objection.  Calls for opinion

 7    testimony.

 8            THE WITNESS:  At Stanford where we had

 9    terminal servers and gateways in the same software,

10    there were times when it was convenient -- just  16:20:26

11    because something had multiple interfaces, it could

12    still perhaps be a terminal server.  So I needed a

13    way of turning off, disabling routing functionality.

14            And I used the command -- I chose the

15    keyword -- configuration keyword command expression 16:21:07

16    "routing."  Then "no routing" would turn off routing

17    functionality in whatever software was running at

18    the time despite its hardware configuration.

19            And then later on at Cisco, to keep the --

20    keep the form of the hierarchy of commands, we added 16:21:35

21    the -- we added our choice of -- we added "IP" in

22    front of it because you could potentially turn off

23    other sorts of routing, or at least that was the --

24    that was the -- that was a possibility for other

25    network protocols.                              16:22:02
```

Page 145

1   BY MR. FERRALL: 16:22:10

2   Q   So you mentioned the term "hierarchy" a

3   couple of times now. So let me ask you to explain

4   the best you can, what is the hierarchy of the Cisco

5   CLI command?   16:22:38

6   A   I can give you examples. There aren't

7   many.

8   There's -- on the EXEC commands, you can

9   have things like "show" as a root of all the

10   commands that -- the root keyword for all the   16:23:15

11   commands that show status of the system.

12   And then at the next level in the

13   hierarchy, you can say, for example, "show

14   interface," or I could say, "show routing." Or I

15   could also say -- if I wanted to examine stuff that 16:23:40

16   was specific to -- specific to some IP-related

17   component of the system, my next keyword would be

18   "show IP," and then I would specify something like

19   "interface." And it would show me -- it would show

20   me the information about -- all the IP information   16:24:08

21   about all the interfaces.

22   And then I can extend that command to be

23   something like an interface name. So "show IP

24   interface," and then I specify an interface,

25   "Ethernet zero," and I see all the information   16:24:25

Page 146

```
 1    there.                                                16:24:29

 2            In configuration commands, there's a class

 3    of configuration commands such as the configuration

 4    command "interface," which I say "interface," and

 5    then I say the interface name and number.  And then   16:24:59

 6    on subsequent lines -- and I'm in an interface

 7    configuration mode is what the terminology is these

 8    days.  That terminology was not in use when I was

 9    doing it.

10            And you could say -- if you wanted to do       16:25:21

11    something regarding IP, let's see, you could say

12    "IP" -- I can say "IP enable" or I can say "no IP

13    enable" to turn off and on IP on that interface.

14            I could say "IP," then a protocol name,

15    and then additional keywords and arguments after      16:25:58

16    that.

17            And it is designed so that the top part of

18    the hierarchy is relatively fixed by time, and the

19    software underneath is implemented so that as new

20    functionality becomes available, you can put it in    16:26:19

21    the logical, correct place in the hierarchy.

22            If we invented something like -- well, we

23    had X25 support.  We could say "X25," and then set

24    various parameters for X25.  IPX, the DECnet

25    example.                                               16:26:42
```

Page 147

1   And you do it for protocols, anything   16:26:49

2   where there's multiple -- where if we're configuring

3   something that is a complex entity, we can nest

4   things and make them symmetric and organized, and

5   basically obeying already established choices that   16:27:23

6   we have made.

7   If somebody -- and that provides the

8   framework, which is a framework that I largely laid

9   down in the early days of Cisco for how

10   configuration works and for how things like "show"   16:27:42

11   commands and the like work.

12   Q   So that framework of the hierarchy that

13   you described, you said that you largely laid down

14   in the early days of Cisco. Did anyone else

15   participate in establishing that framework for the   16:28:07

16   hierarchy?

17   A   There were many engineers eventually

18   working on IOS even in the early days, and I was the

19   lead software person. I had -- I had veto on

20   choices that others would make, although we tended   16:28:41

21   to discuss what choices we wanted. And over time, a

22   lot of the early engineers internalized the

23   aesthetic that I was trying to maintain.

24   Q   And if I understand, you described the

25   benefit of this framework of the hierarchy as   16:29:42

Page 148

1   allowing for implementing new functionality in a --   16:29:49

2   what you said -- in a logical, correct place?

3   A   That is the benefit.

4   MR. NEUKOM: Objection. Asked and

5   answered.   16:30:09

6   BY MR. FERRALL:

7   Q   Are there any other benefits to the

8   framework for the hierarchy?

9   MR. NEUKOM: Objection. Vague.

10   THE WITNESS: We believed that it would   16:30:29

11   make it easier -- we believed that the customers

12   would like it.

13   BY MR. FERRALL:

14   Q   Why is that?

15   A   Customers always like products that look   16:30:52

16   like they were built by one company.

17   Q   How would your hierarchy contribute to

18   that?

19   MR. NEUKOM: Objection. Foundation, calls

20   for speculation and vague.   16:31:06

21   THE WITNESS: I'm sorry. What was your

22   question?

23   BY MR. FERRALL:

24   Q   How does the framework for the hierarchy

25   that you described allow customers to feel like the   16:31:22

Page 149

```
1    before I offer a --                                 16:38:18

2             MR. NEUKOM:  Which page are you currently

3    looking at, Brian?

4             MR. FERRALL:  The page that begins with

5    the "clear" command.  It's number 5, I guess.  I    16:38:24

6    didn't realize there were pages on here.

7             MR. NEUKOM:  Mr. Simmons has helpfully

8    reminded me that we've now been on the record for an

9    hour and 15 minutes.  I'm open-minded on timing, but

10   when we get to a good spot, it would be nice to take  16:38:49

11   a short break.

12            MR. FERRALL:  Okay.  Let me just finish

13   some questions about this.

14            THE WITNESS:  Okay.  I've scanned it

15   briefly.                                             16:39:32

16   BY MR. FERRALL:

17       Q   Okay.  If you could turn to page 5, which

18   is where the "clear" command set begins.

19            Are you there?

20       A   Yes, I am.                                   16:39:39

21       Q   Okay.  At Cisco, do you have a terminology

22   for the different levels of the hierarchy?

23       A   No, no particular terminology for the

24   hierarchy.  There would be a top level command, top

25   level commands and sub commands.                     16:40:14
```

Page 153

1   Q   So in this case, there's a command, for   16:40:25

2   example, "clear ARP-cache," right?

3   A   Yes.

4   Q   In that command, is that the ARP cache

5   that's being cleared?   16:40:55

6   A   I believe that command clears -- clears

7   all address resolution caches. There's more than

8   one address resolution protocol in the system, or at

9   least there was when we were a primarily

10   multi-protocol router.   16:41:19

11   Q   Okay. If you go to page 6, the next page,

12   now, for this, "interface Ethernet," is that a

13   hierarchy?

14   A   It is --

15   MR. NEUKOM: Objection. Calls for opinion   16:42:27

16   testimony.

17   THE WITNESS: It is the leading element of

18   a hierarchy.

19   One of the choices that I made at Stanford

20   actually in introducing the "interface" command was   16:42:49

21   that it assumed a block structure where I could say

22   things like "interface Ethernet zero," and then I

23   could say -- I could have a bunch of -- at Stanford

24   I had a bunch of what we called interface sub

25   commands that would follow on subsequent lines.   16:43:17

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1   I could very well have made the choice to   16:43:21

2   write that as, on one line, for example, "interface

3   Ethernet zero address," an IP address, a subnet

4   mask, and you would have a hierarchy of

5   configuration stuff.   16:43:44

6   Going outside into Cisco, you could have

7   "interface Ethernet zero." I could have "IP" and

8   then a bunch of IP keywords after that. I could

9   have "interface Ethernet zero DECnet" and have a

10   bunch of DECnet keywords underneath that. And that   16:44:00

11   would very clearly demonstrate a hierarchy.

12   I made the aesthetic choice of saying --

13   of turning the word "interface" -- which I could

14   have chosen something like "IF" or "net-in" or

15   something like that, but I chose "interface" -- I   16:44:23

16   like writing words out -- I chose as a typing

17   shorthand to say this is the front end of all -- of

18   the hierarchy for all the rest of these commands.

19   So this does -- it is a hierarchy,

20   especially in the Cisco multi-protocol world that it   16:44:47

21   evolved into.

22   BY MR. FERRALL:

23   Q   So I'm trying to understand the nature of

24   your hierarchy.

25   You said, for example, you could have used   16:45:50

Page 155

1   "IF" instead of "interface."   16:45:51

2   A   It was just an example of choice of --

3   choice of word.

4   But under discussion was rather what was a

5   hierarchy here. And these are the -- "interface"   16:46:05

6   with an argument after it is the first part of a

7   hierarchy.

8   You could draw this in a tree shape, and

9   it would be -- the hierarchy would be very obvious.

10   Q   So is it still -- would it still be using   16:46:36

11   your hierarchy if this command were "IF Ethernet"?

12   MR. NEUKOM: Objection. Calls for

13   speculation, vague.

14   THE WITNESS: There's many other pieces to

15   the -- there are many other pieces to the hierarchy.   16:47:00

16   This is -- I was aiming for a hierarchical,

17   symmetric, aesthetically pleasing set of

18   configuration command expressions.

19   BY MR. FERRALL:

20   Q   Tell me about -- what's aesthetically   16:47:28

21   pleasing about this command expression "interface

22   Ethernet"?

23   MR. NEUKOM: Objection. Calls for opinion

24   testimony.

25   THE WITNESS: This is a command fragment.   16:47:44

                                                            Page 156

1   MR. NEUKOM: Objection. Misstates prior   17:31:18

2   testimony.

3   THE WITNESS: To the best of my

4   recollection, soon after I acquired the copy of the

5   Yeager software.   17:31:42

6   I didn't like his lack of hierarchy, so I

7   started grouping commands that displayed the status

8   of data structures. I started putting them under --

9   I started building a hierarchy under "show." It was

10   not a very deep hierarchy at the time.   17:32:07

11   BY MR. FERRALL:

12   Q   So was "show" the first hierarchy that you

13   built?

14   MR. NEUKOM: Objection. Vague.

15   THE WITNESS: I don't know if it was the   17:32:27

16   first. It was an early one.

17   BY MR. FERRALL:

18   Q   And tell me about the process whereby you

19   selected the word "show."

20   A   I considered the function that I wanted.   17:32:44

21   I wanted to see what the contents of data structures

22   were inside the software.

23   And I had a number of possibilities.

24   There was "show," there was "display," there was

25   "print," there was "list," there was "dump." All   17:33:08

Page 167

1   sorts of reasonable possibilities.   17:33:12

2   And the one that appealed to me was

3   "show."

4   Q   Why did "show" appeal to you?

5   A   Because in my mind, I said I want to tell   17:33:31

6   the software, show me your -- show me your data

7   structures.

8   Q   Why was that better in your mind than the

9   alternatives? Why was "show" better than the

10   alternatives?   17:33:51

11   A   It appealed to me aesthetically. I had to

12   pick something, and that one -- that one appealed to

13   me at that time.

14   Q   Had you ever heard of someone using the

15   two words "show users" together before you decided 17:34:37

16   to use that as a command?

17   MR. NEUKOM: Objection. Vague.

18   THE WITNESS: I don't have a memory of

19   that at this point.

20   BY MR. FERRALL: 17:35:30

21   Q   What about the term "show hosts"? Can you

22   tell me the creative process that went into choosing

23   that command?

24   A   So I wanted to see the names of the

25   computers that were on the network.   17:36:09

                                          Page 168

1   There were -- possibilities included   17:36:24

2   something like "who," or -- that wouldn't go

3   anywhere because I wanted to start building things

4   into a hierarchy. And I'd already started -- okay,

5   if I'm going to be showing some internal data   17:36:41

6   structure which showed -- show host would show that,

7   so I was already constrained by the choice of that

8   keyword to -- for displaying internal data

9   information.

10   I could have said something like   17:37:01

11   "computers." I could have said something like

12   "names," "systems," "network systems."

13   Some people thought "end systems" was a

14   good thing to call -- to distinguish between

15   computers and routers. "Host" was what I ended up   17:37:27

16   choosing.

17   Q   Okay. Were you using the word "host" in

18   the command "show hosts" differently than how that

19   word had been used in networking for years before

20   that?   17:39:24

21   MR. NEUKOM: Okay. Foundation, vague,

22   calls for opinion.

23   THE WITNESS: I'm not familiar with the

24   years before, but I was using the term as I

25   understood it at that time.   17:39:43

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1   BY MR. FERRALL: 17:39:52

2   Q   Well, you were aware that others in the

3   computer field used the word "host," right, before

4   you did?

5   MR. NEUKOM: Objection. Foundation and   17:40:02

6   vague.

7   THE WITNESS: I was not aware of anybody

8   that was using that term in a command expression in

9   a router or gateway, as we called it then.

10   BY MR. FERRALL: 17:40:25

11   Q   That wasn't my question. My question was,

12   you were aware of people in the field of computing

13   using the word "host," right, before you used it?

14   MR. NEUKOM: Same objections and asked and

15   answered.   17:40:46

16   THE WITNESS: I was aware of people using

17   the word "host" in the computer field.

18   BY MR. FERRALL:

19   Q   Before you used it?

20   A   Yes.   17:41:04

21   Q   Now, according to your counsel, the

22   command "show host name" was created substantially

23   later; is that -- am I right about that?

24   MR. NEUKOM: Objection to form.

25   THE WITNESS: Are you asking me or my   17:41:41

                                                     Page 170

1   MR. FERRALL: Why don't we go off the   17:45:36

2   record and get a time check.

3   THE VIDEO OPERATOR: Going off the record,

4   the time is 5:45 p.m.

5   (Recess, 5:45 p.m. - 5:46 p.m.)   17:45:41

6   THE VIDEO OPERATOR: Back on the record,

7   the time is 5:46 p.m.

8   MR. NEUKOM: So back on the record. I

9   think we're all in agreement and the videographer

10   has confirmed that there are 26 minutes left.   17:46:06

11   MR. FERRALL: Right.

12   Q   So you have a set of commands that begin

13   with the keyword "clear," right?

14   A   Um-hum.

15   MR. NEUKOM: I think he needs a "yes" or a   17:46:36

16   "no."

17   THE WITNESS: Yes, the Cisco command line

18   interface has a hierarchy of command expressions

19   that begin with the keyword "clear."

20   BY MR. FERRALL: 17:46:55

21   Q   Were you aware of any operating system

22   that used the word "clear" as a command before you

23   joined Cisco?

24   MR. NEUKOM: Objection. Vague.

25   THE WITNESS: I believe there is a UNIX   17:47:21

Page 173

1   command "clear" that blanks a screen. I'm not aware   17:47:22

2   of any operating system that uses "clear" in the

3   sense that the Cisco CLI uses "clear."

4   BY MR. FERRALL:

5   Q   Tell me about the creative process that   17:47:57

6   went into your selection of the word "clear" as the

7   first keyword in these commands.

8   MR. NEUKOM: Objection. Vague and

9   compound.

10   THE WITNESS: I needed some way of   17:48:19

11   resetting or clearing data structures in the box,

12   something that's very useful in the debugging of --

13   that sort of action is very useful in debugging

14   software, correcting problems in a running system

15   and the like.   17:48:53

16   And "reset" or "clear" or "zero" or

17   "restart" certainly could have been possibilities.

18   It was a very generically simple example. It was

19   another sort of generic activity of I wanted to

20   clear or reset some data structures. And that   17:49:20

21   one -- I don't recall, but I suspect that one seemed

22   reasonable and came to mind.

23   BY MR. FERRALL:

24   Q   Do you recall why you selected the word

25   "clear"?   17:49:47

1   A   It seemed -- it seemed aesthetically   17:49:52

2   pleasing to me. It was something that was

3   descriptive of an action that I wanted to take that

4   was a fairly generic action, a fairly common action.

5   Q   What does "banner MOTD" mean?   17:50:47

6   A   MOTD is message of the day.

7   Q   Did you make up that acronym?

8   A   No, I did not.

9   Q   Who did?

10   A   I don't know.   17:51:07

11   Q   Did you coin the term "banner" as an

12   operating system command?

13   MR. NEUKOM: Objection. Vague.

14   THE WITNESS: I simply implemented the

15   command.   17:51:37

16   BY MR. FERRALL:

17   Q   Are you aware of operating systems in

18   existence before you joined Cisco that used the

19   command "banner"?

20   A   I don't recall any at this point.   17:51:52

21   Q   When did you come up with the command

22   "banner MOTD"?

23   A   The command that came first was just

24   "banner," and its function was to print a vacant

25   terminal message on a terminal and to apply some   17:52:26

Page 175

1   jitter in the positioning so that it wouldn't burn   17:52:31

2   in those letters in the -- in one spot in the

3   terminal.

4   Then I think after we left Stanford --

5   actually, I'm not clear when the MOTD was   17:52:55

6   implemented. I suspect it was after I left

7   Stanford, but I'm not -- my memory is not clear on

8   that.

9   Q   So to be clear, you're not saying that you

10 came up with the term "banner" as a command, are   17:53:15

11 you?

12   MR. NEUKOM: Objection. Misstates prior

13 testimony, vague.

14   THE WITNESS: I implemented certain

15 functionality that I triggered with that   17:53:26

16 configuration command.

17 BY MR. FERRALL:

18   Q   I'm going to ask the question again.

19   Are you saying that you came up with the

20 term "banner" as a command?   17:53:38

21   MR. NEUKOM: Same objections.

22   THE WITNESS: That was a choice that I

23 made.

24 BY MR. FERRALL:

25   Q   You borrowed it from another operating   17:53:55

Page 176

1   A   IPv6 address. IPv6 route.   18:08:37

2   Q   What was your role in composing IPv6

3 address?

4   A   I was creating a prototype IPv6

5 implementation.   18:09:03

6   Q   Did you come up with that command, "IPv6

7 address"?

8   A   Yes.

9   Q   When did you do that?

10   A   I believe it was 1996.   18:09:21

11   Q   Did you work with anyone else on that?

12   A   Yes.

13   Q   Who?

14   A   Dino Farinacci and Rand Atkinson, and

15 later Pedro Marquez.   18:09:42

16   Q   The other one you said was IPv6 route?

17   A   That may have been Dino.

18   MR. FERRALL: Let me go off the record for

19 a second.

20   THE VIDEO OPERATOR: Going off the record,   18:10:11

21 the time is 6:10 p.m.

22   (Recess, 6:10 p.m. - 6:11 p.m.)

23   THE VIDEO OPERATOR: Back on the record.

24 The time is 6:11 p.m.

25 ///   18:11:34

                                                   Page 184

1   BY MR. FERRALL: 18:11:36

2   Q   Did you compose the command "timers basic

3   RIP"?

4   A   I believe I did.

5   Q   Prior to your joining Cisco, are you   18:11:55

6   familiar with any commands that use the word

7   "timers"?

8   MR. NEUKOM: Objection. Vague.

9   THE WITNESS: No, I was not aware of any

10   operating system, general purpose or network   18:12:13

11   specific, that used -- had a "timers" command.

12   BY MR. FERRALL:

13   Q   How did you come up with the command

14   "timers basic RIP"? Describe that creative process

15   for me.   18:12:30

16   A   There developed a need or a desire to

17   change some of the fundamental timing constants

18   of -- I think first was the IGRP routing protocol,

19   and I implemented a command that allowed those

20   timers to be user-configured.   18:12:59

21   And later on I or someone else extended

22   that to the RIP timers so customers could speed up

23   or slow down the pulse of routing updates.

24   Q   And when did that occur?

25   A   1988 or 1989.   18:13:36

                                                  Page 185

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1   Q   How did you choose the term -- the words   18:13:39

2   "timers basic" for this function?

3   A   I don't remember where "basic" came from.

4   But using the keyword "timers" was my -- was my

5   introduction, was my creation.   18:14:00

6   MR. NEUKOM: Counsel, I believe we're now

7   beyond seven hours.

8   MR. FERRALL: Okay. Well, I -- given

9   Mr. Lougheed's tenure at Cisco, I thank him for his

10 time, but I will say I think we deserve some more   18:14:22

11 time with him.

12   But I understand seven hours is up and

13 you're going to say enough is enough for today I

14 take it; is that right?

15   MR. NEUKOM: Certainly for today for the   18:14:31

16 sake of the witness. And we will respectfully

17 disagree with the idea that counsel needs more than

18 seven hours --

19   MR. FERRALL: Okay.

20   MR. NEUKOM: -- needs more than today.   18:14:41

21 But we can discuss that for another day.

22   In the meantime, I should note for the

23 record the witness reserves the right to review the

24 transcript and make corrections.

25   Brian, I'm not sure I did that for   18:14:51

                                                    Page 186

Veritext Legal Solutions
866 299-5127

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1   Mr. Tjong. If you're okay with it, I'd like to just   18:14:53

2   do a stipulation across the case that both sides

3   have the 30-day review and errata right for all

4   transcripts regardless whether counsel puts it on

5   the record at the depo as a two-way street.   18:15:04

6   MR. FERRALL: That's fine. I thought it

7   existed as a matter of procedure anyway. So that's

8   fine.

9   MR. NEUKOM: I hope you're right, but glad

10   to have the stipulation, even if it's unnecessary.   18:15:17

11   MR. FERRALL: Okay.

12   MR. NEUKOM: Thanks very much.

13   THE VIDEO OPERATOR: This concludes

14   today's videotaped deposition of Mr. Kirk Lougheed.

15   We're off the record at 6:15 p.m. Thank you.   18:15:25

16   (TIME NOTED: 6:15 p.m.)

17   --o0o--

18

19

20

21

22

23

24

25